prior to surgery. Multivariable logistic regression was conducted to assess the independent association of active smoking status with graft failure.

Results: 17,147 infrainguinal bypasses were performed in 7008 (41%) active smokers and 10,139 (59%) nonsmokers. Active smokers were more likely to be younger, male, black race, and have a history of chronic obstructive pulmonary disease ($P < .001$; all). Nonsmokers were more likely to be functionally dependent and had significantly more comorbidities (ie, hypertension, overweight or obese, diabetes, congestive heart failure, history of previous cardiac surgery or intervention, and dialysis ($P < .001$; all). The presence of critical limb ischemia was similar in both groups (47% of active smokers vs 46% of nonsmokers; $P = .54$). More nonsmokers received a tibial level bypass than active smokers (47% vs 34%; $P < .001$). There was a trend toward increased early graft failure in active smokers compared with nonsmokers (5.5 vs 4.8%; $P = .06$). When adjusting for other variables, especially level of bypass, there was an independent association between active smoking and early graft failure on multivariable analysis (adjusted OR, 1.22; 95% CI, 1.04-1.42; $P = .01$).

Conclusions: Although nonsmokers were significantly older, had more comorbidities, and required more distal revascularization, active smokers still had an increased risk for developing early graft failure. These results stress the need for smoking cessation prior to lower extremity bypass. Further research is warranted to determine an optimal period of abstinence among smokers with PAD to reduce their risk for early graft failure.

Delayed Permanent Access Placement in Incident ESRD Patients: Are Young Patients Waiting too Long?

Justin R. Wallace, Theodore Yuo, Ellen Dillavou. University of Pittsburgh Medical Center, Pittsburgh, Pa

Objectives: Over 80% of incident end-stage renal disease (ESRD) patients initiate hemodialysis (HD) with catheter. Current guidelines lack temporal recommendations for subsequent permanent access placement after HD initiation. We compared length of time until first permanent access placement after HD initiation among various patient subgroups.

Methods: The United States Renal Data System dataset for 2006 was reviewed for patients that initiated HD with a catheter and no maturing arteriovenous access. We then used current procedural terminology codes to identify patients who underwent subsequent permanent access surgery; placement of arteriovenous fistula or arteriovenous graft. Time from HD initiation to permanent access placement was compared by age, ESRD etiology, demographic variables and access type. We compared median times with access placement, and then assessed predictors for access placement within 90 days via multivariable logistic regression.

Results: In 2006, 62% (n = 62,663) of ESRD patients >18 years old initiated HD with a catheter and no maturing arteriovenous access. Following initiation of HD, 37% (n = 23,035) of patients had surgery for permanent access. Timing of first access ranged from 1 to 1070 days. Three-fourths received an AVF, but less than one-half (n = 10,210) were placed in the first 90 days of HD (Table). Age, ESRD etiology, and access type were all significantly associated with time to first access. Significant predictors of access placement within 90 days included non-white race (OR, 1.08; $P = .002$), male sex (OR, 1.10; $P < .001$), age ≥ 65 (OR, 2.67; $P < .001$), prior nephrology care (OR, 1.37; $P < .001$), and ESRD due to hypertension or diabetes mellitus (OR, 1.52; $P < .001$).

Table. Time to first access placement, overall and stratified

		Time to first access Interquartile	
	n	*Median*	*range*
All patients	23,035	103	53-190
By age category[a]			
18-64	9892	139	83-258
65-74	6333	82	43-153
75-84	5554	76	41-135
over 85	1256	74	38-128
By ESRD etiology[a]			
Hypertension	6970	97	50-182
Diabetes	10,934	100	52-188
Nephritis	2284	111	60-196
Congenital	1222	116	62-208
Other	1625	114	66-208
By access type[a]			
Arteriovenous fistula	17,201	101	54-183
Arteriovenous graft	5834	106	51-213

[a]Within group median time differences statistically significant ($P < .001$) using Kruskal Wallis and Wilcoxon rank-sum tests.

Conclusions: We found a longer than expected time between HD initiation and first access attempt in patients who initiated HD with catheter only. Access placement within 90 days was accomplished in less than 17% of patients and these were most likely older, white, male patients with ESRD due to DM or HTN. This low percentage of timely access placement, most evident in younger patients, deserves further investigation.

One Hundred Open Abdominal Aortic Aneurysm Repairs in the EVAR Era

Omar Haallah. Northshore Long Island Jewish Hospital System, Great Neck, NY

Objectives: Abdominal aortic aneurysms may be repaired by either endovascular aneurysm repair (EVAR) or open technique. Most recent studies showed that EVAR carries a lower mortality rate with a higher intervention rate. Open surgical repair has a higher perioperative mortality rates and, as recently shown, has a laparotomy related complications. Still open surgical repair is considered to be more durable. Our objective is to look at a group of open surgical repairs in the era of widely accepted endovascular repair.

Methods: Observations of a single surgeon experience for 100 consecutive open surgical repairs and 253 EVARs were made. Open surgical approach was chosen for patients unfit for endovascular approach or patient preference, reporting perioperative and postoperative morbidities and mortality at midterm follow-up and comparing them with the accepted EVAR results.

Results: 100 patients from 100 consecutive procedures of open surgical repair of aortic aneurysm were observed, of whom 75 were males and 25 females. Eleven cases were juxtarenal. Eighty-one were approached transabdominally while the rest were retroperitoneal approach. In seven cases the inferior mesenteric artery was reimplanted. Complications included 2 postop myocardial infarctions (both underwent coronary artery bypass graft procedure), 1 postop GI bleeding, 1 postop cerebrovascular accident, 1 renal dysfunction, and 2 postop abdominal wall hernias.

Conclusions: Despite difficult anatomy open surgical repair can be done safely in the era of EVAR for patient who are either not candidates for the endovascular approach or who desire the open surgical one.

18F-FDG PET is a Useful Test to Evaluate Inflammation Associated with Human Abdominal Aortic Aneurysm Development

Sean J. English[a], Frank M. Davis[a], Jose A. Diaz[a], Janet A. English[a], Tessa Watt[a], James R. Stone[b], Morand R. Piert[a], Gilbert R. Upchurch Jr.[b]. [a]University of Michigan, Ann Arbor, Mich; [b]University of Virginia, Charlottesville, Va

Objectives: A noninvasive test that could document increased inflammation in the aortic wall would be useful for identifying markers of impending (abdominal aortic aneurysm) AAA rupture. This study compared 18F-fluorodeoxyglucose (18F-FDG) positron emission tomography (PET) uptake in the infrarenal abdominal aorta of nonaneurysmal patients with carotid atherosclerosis to that of patients with abdominal aortic aneurysm (AAA) disease evaluated at a single institution.

Methods: Patients with documented carotid disease by duplex and no aneurysmal degeneration (control, n = 31 scans) and AAA patients (n = 29 scans) that had undergone whole-body 18F-FDG PET scans were identified. Regions-of-interest were drawn around the outer wall of the aorta in each case, from the iliac bifurcation to the crossing of the left renal vein, and the maximum standard uptake value (SUVmax) was determined along the infrarenal abdominal aorta (Fig). A Student *t*-test with a Welch correction was performed to compare control and AAA patients.

Results: Patient demographics were well matched between the groups in terms of age, sex, and body mass index, as well as comorbidities including cancer, hypertension, chronic obstructive pulmonary disease, congestive heart failure, diabetes mellitus, and hyperlipidemia requiring statin use. Mean aortic diameters for the control and AAA groups were 2.2 ± 0.1 cm and 4.6 ± 0.2 cm ($P < .0001$), respectively. SUVmax values for the control and AAA groups were 3.1 ± 0.1 and 3.8 ± 0.3 ($P = .03$), respectively. No correlation was found between SUVmax and maximum AAA diameter; however, 70% of SUVmax values were within 5.5 cm of the maximum AAA diameter along the axis of the AAA. One AAA patient ruptured 8 days after his 18F-FDG PET scan, with a SUVmax of 4.6 and a maximum AAA diameter of 4.4 cm.

Conclusions: This study describes one institution's experience assessing inflammation in the AAA wall by 18F-FDG PET, demonstrated by a 23% greater degree of 18F-FDG uptake by the AAA group. Prospective comparisons of 18F-FDG uptake by AAAs to other radiotracers that may demonstrate local inflammation, as well as structural changes temporally demonstrated by computed tomography, are necessary to determine the predictive value of PET as a tool that may be used to survey AAA patients in the future and determine AAA rupture risk.